Quantifying the Benefit of Advanced Traveler Information Systems (ATIS)

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Problem: Quantifying Benefits of ATIS Has Proven Difficult

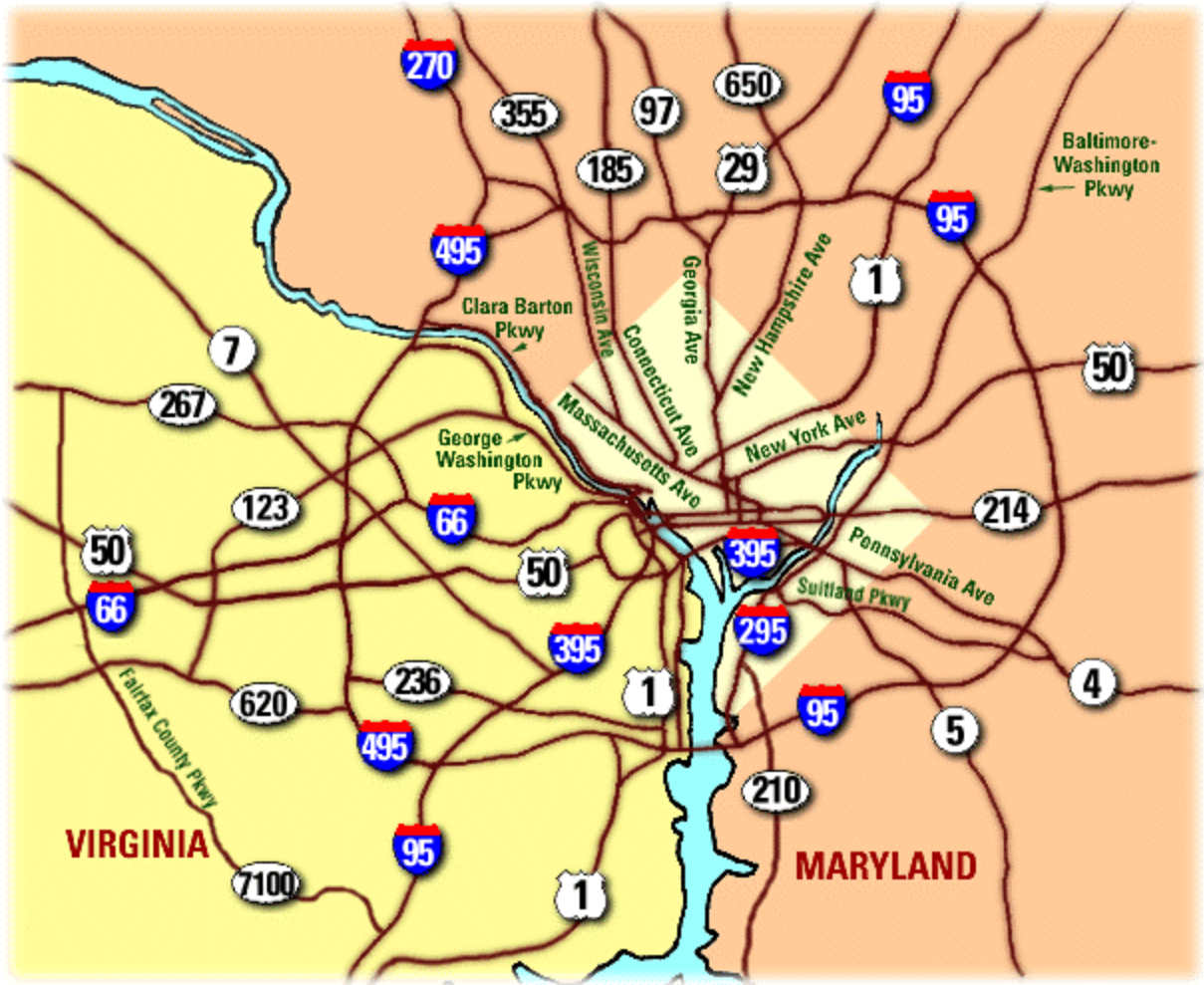
- **Contradictory results obtained from ATIS evaluation efforts:**
  - **Survey research consistently finds that ATIS users *perceive time savings***

***Smart Trek*, WA 2000** **_Trailmaster_, AZ 2000** ***SmarTraveler*, DC 2000**

  - **BUT, controlled field tests consistently find *marginal to no reduction in observed in-vehicle travel time***

***Pathfinder*, CA 1993** ***TravTek*, FL 1995** ***ADVANCE*, IL 1996**

DC Traveler Information Website www.smartraveler.com



"Re-Enacting" Commutes via Simulation

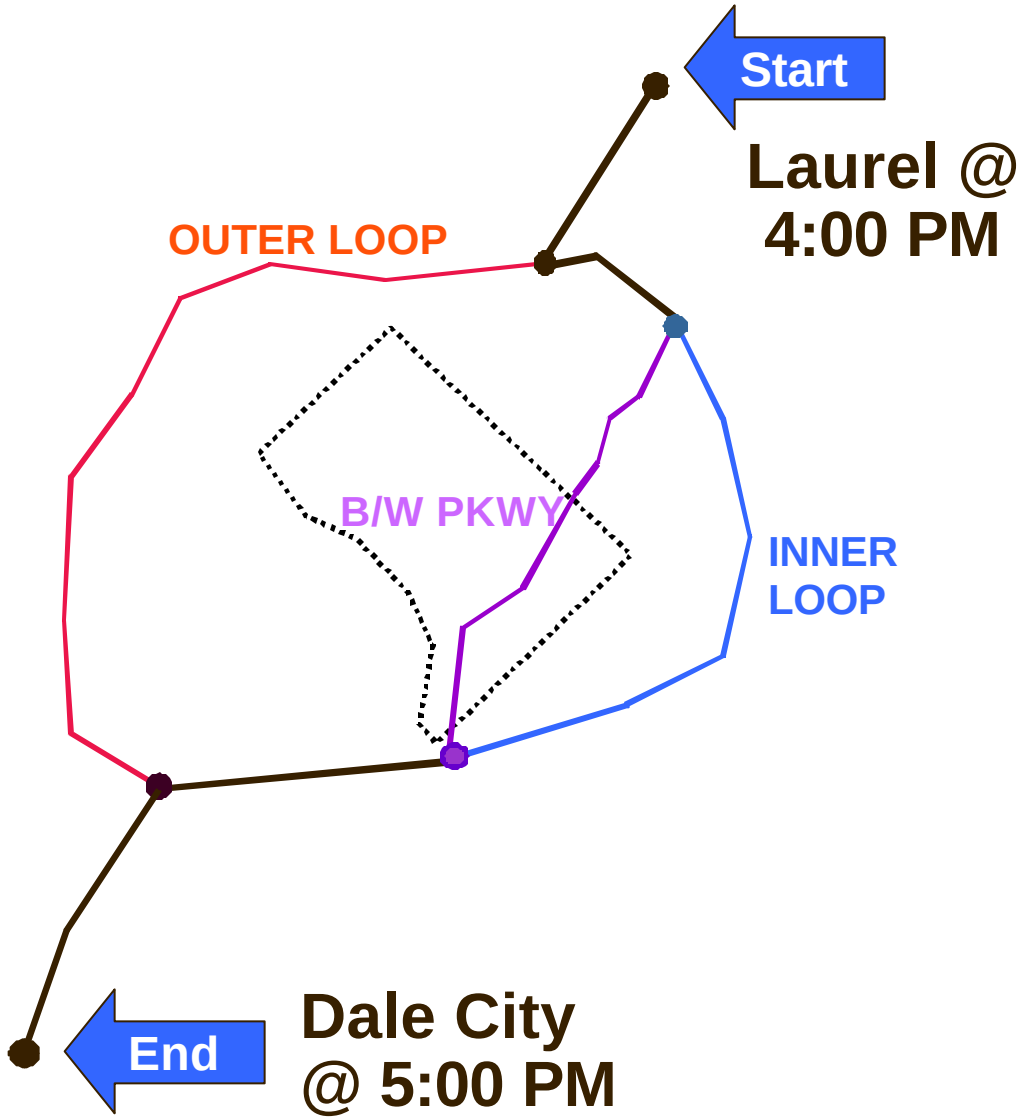
Travel Times

Day	Outer Loop	Inner Loop	B/W Pkwy
1	➡ 56	61 !	☆ 52
2	☆ ➡ 48	54	59
3	77 !	63 !	➡ 61 !

➡ ATIS Pre-Trip Pick

! Late Arrival

☆ Optimal Choice



Commuter Behaviors Simulated

Afraid of Being Late

Scaredy Commuter (No ATIS Use)

Macho Commuter (No ATIS Use)

Doesn't Want to be Early

Consults Website Pre-Trip, May Alter Route Or Timing

ATIS Commuter

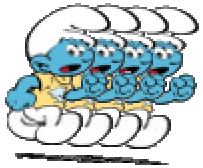
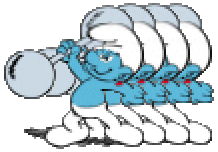
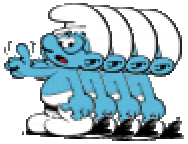
Compared Against….

Optimal

Perfect "20/20 Hindsight" Congestion Prediction

Laurel
Sept. 1999
Dale City
1029 Trials

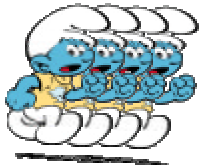
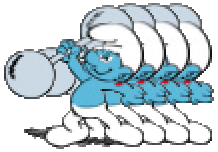
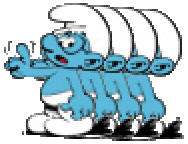
ATIS Commuters Are On-Time More Frequently

Commuters	On-Time Reliability	Just-In-Time Reliability*
 Scaredy Commuters	90%	45%
 Macho Commuters	78%	54%
 ATIS Commuters	92%	62%
Optimal	100%	100%

*Just-In-Time = On-Time and < 10 min Early

Laurel
Sept. 1999
Dale City
1029 Trials

ATIS Commuters Save Time But Not Much In-Vehicle Time

Commuters	Travel Time (min)	PM Travel Budget (min)	Days Late (%)
 Scaredy Commuters	62.1	83.5	10%
 Macho Commuters	63.1	77.9	22%
 ATIS Commuters	2% 62.2	13% 73.9	8%
Optimal	3% 61.3	23% 64.4	0%

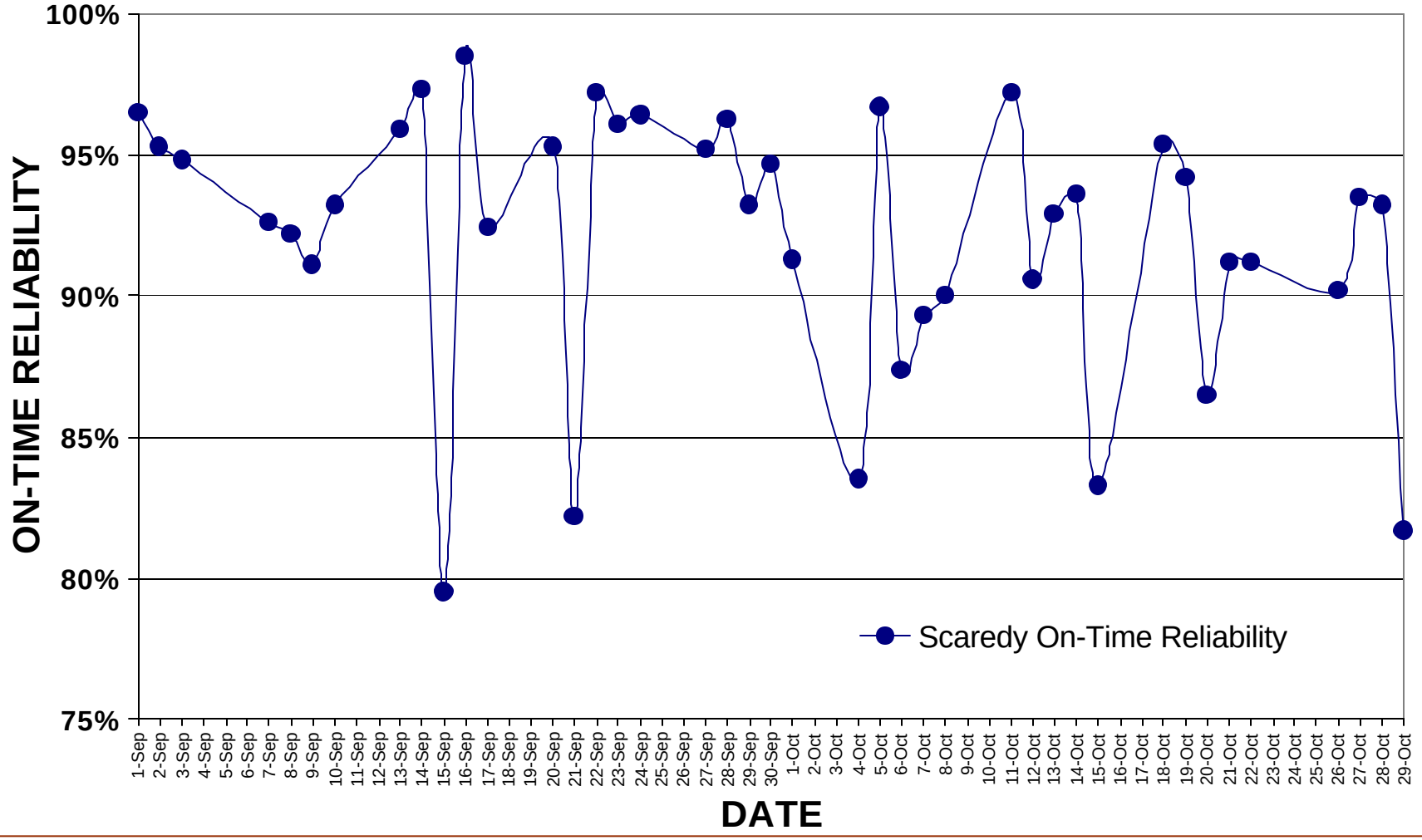
All Q-Ds

DC Network

Sept.-Oct. 1999

3.1 Million Trials

Approach Can Be Used To Track Changes in Travel Reliability



All O-Ds

DC Network

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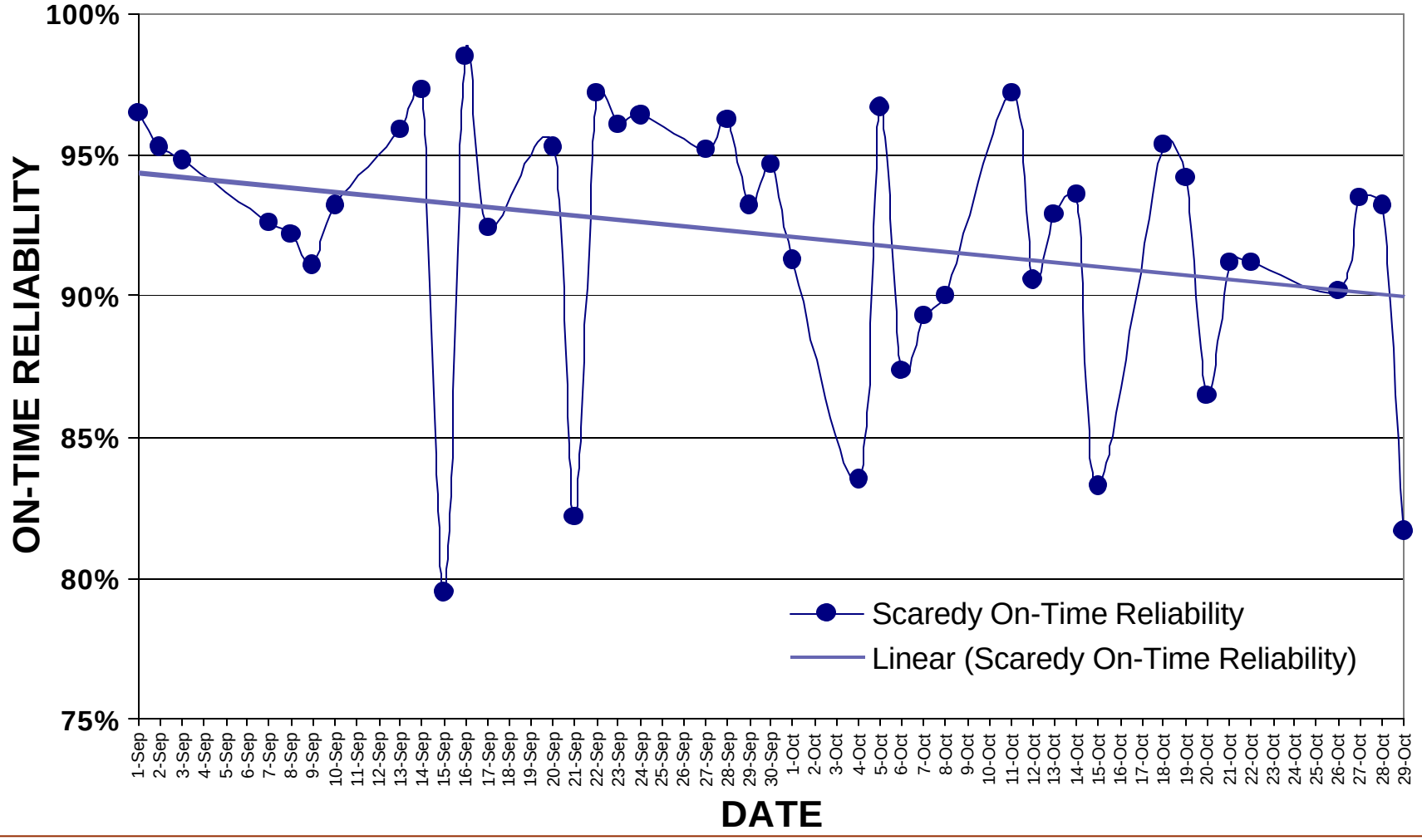

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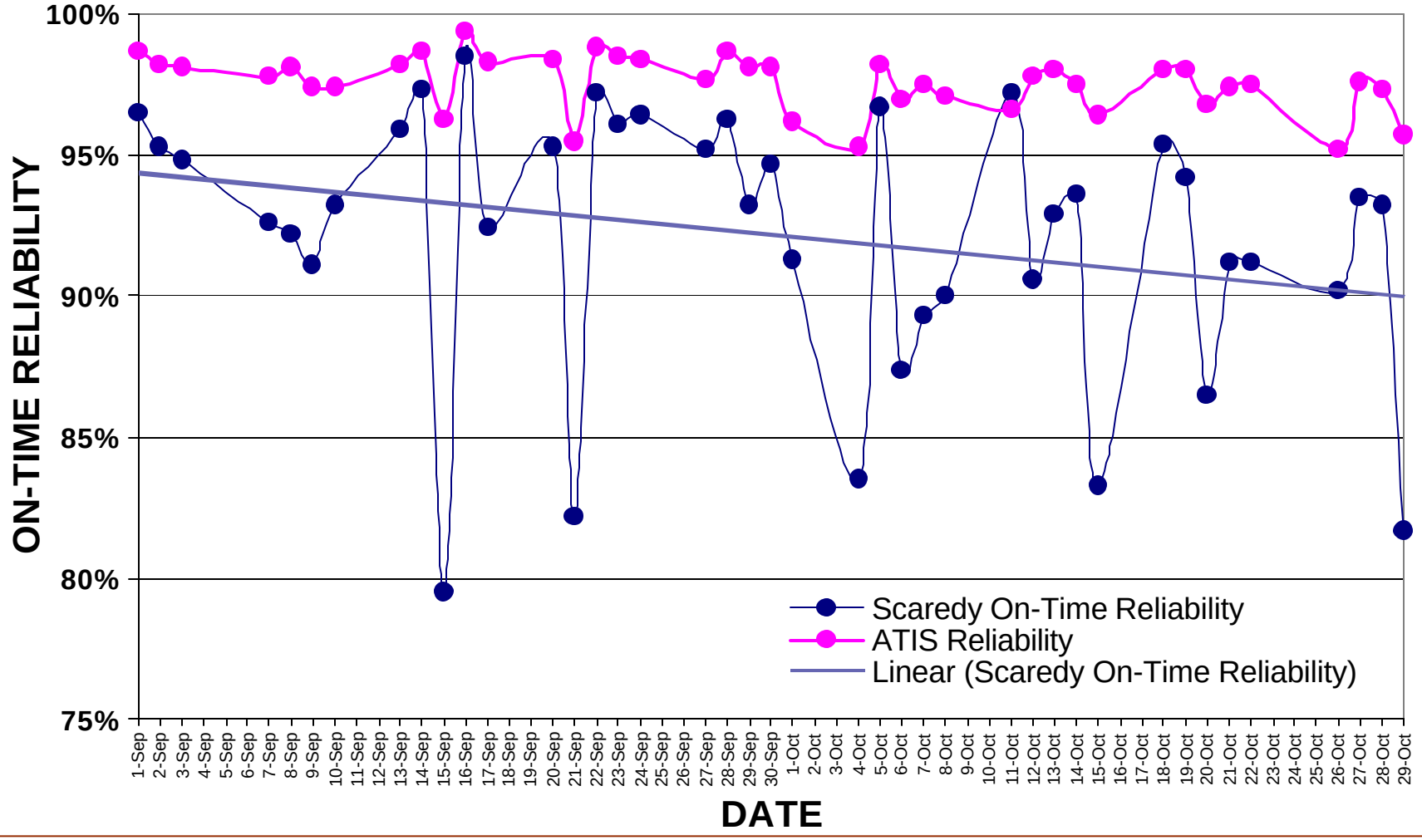

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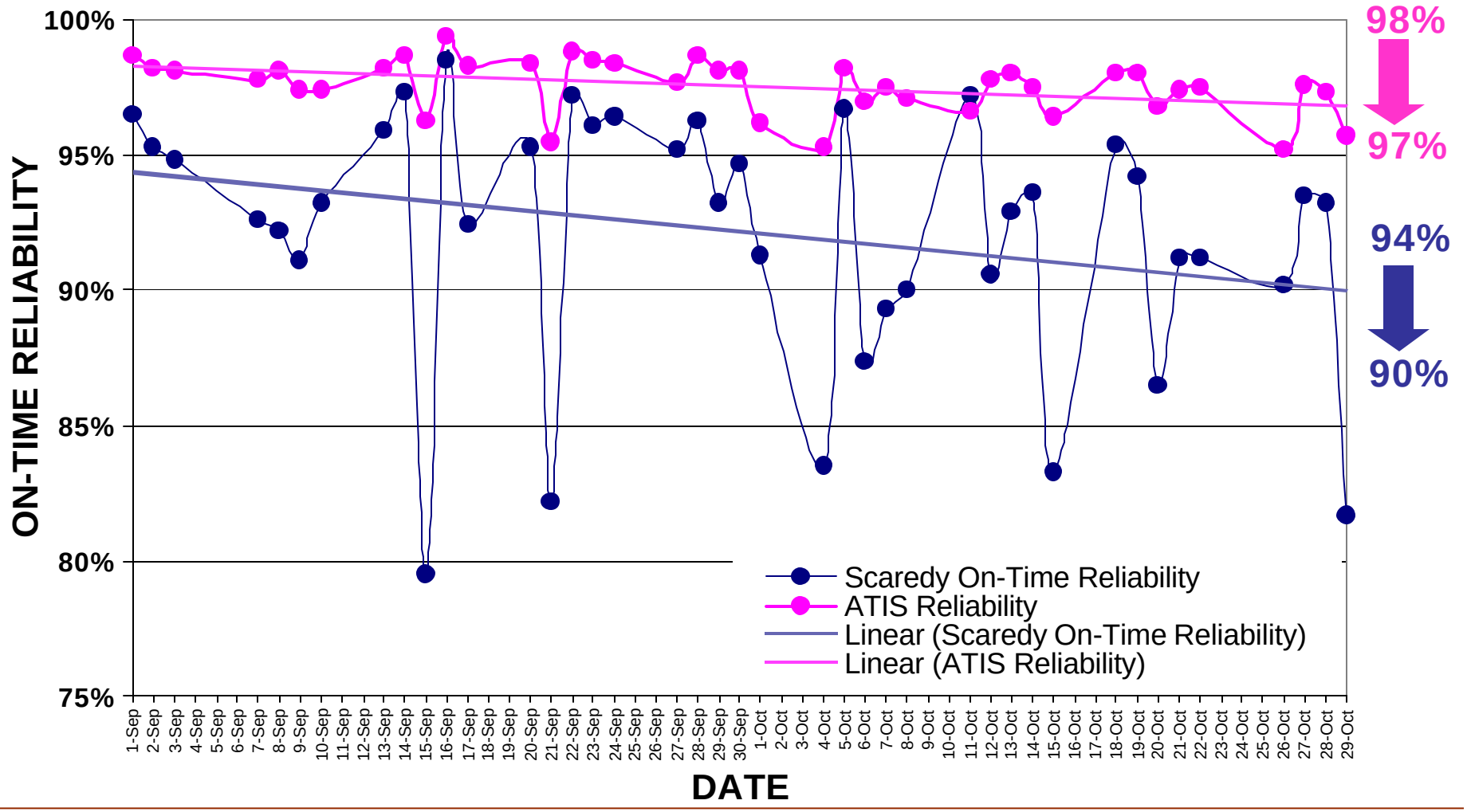

Conclusion: ATIS Yields Time Management Benefits

- **No conflict** between survey and empirical research
  - ATIS users *correctly perceive* that they save time
  - Field studies *correctly measured* only small changes in in-vehicle travel times

- When travel behavior focused on *travel time reliability*
  - ATIS users save time in terms of *total travel budget*
  - In-vehicle travel time not always minimized

- *Annual time savings can be significant and highly valued*
  - 80+ hours per year for some long commutes (DC)
  - predictable travel helps to reduce *commuter stress*